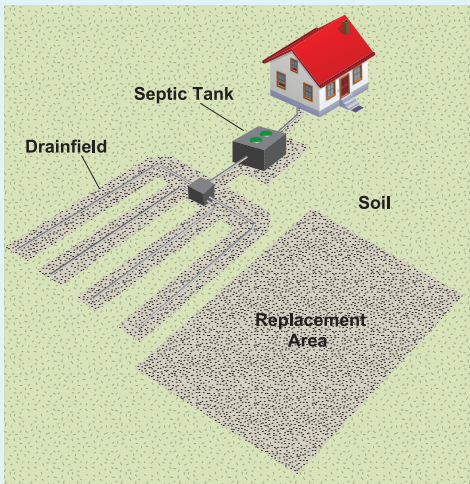


# Doing Our Business

Upland runoff and groundwater feed our creeks. In spring, Judd Creek has high fecal coliform bacteria from the feces of warm-blooded animals. Autumn nitrogen levels in Mileta Creek are five times higher than the other creeks. Because runoff gets to creeks faster than it percolates to groundwater, the creeks serve as an early warning system for potential threats to our groundwater and potable water supply. Not all of the bacteria and nitrogen in the creeks come from humans, but it is a safe bet that some does and we don't really want to drink it no matter who put it there.

## Gravity systems

New-fangled septic systems weren't common until about 15 years ago. Most homes on the Island use a simple gravity septic system. This is an example of a conventional gravity septic system.



Right, is a typical two-chamber septic tank.

## Seeing in black and grey

Composting and incinerating toilets are allowed in King County. Although these waterless toilets take care of "black water" (e.g. feces and urine), "greywater" from the washing machine, bathtub and sinks still needs to be treated. Septic tanks and drainfields are not obsolete, but they can be downsized if used with a waterless toilet.

## Waterless toilets

Composting and incinerating toilets may be a suitable alternative for retrofitting small lots. The Septic Solutions Committee of the Vashon-Maury Island Community Council encourages homeowners who currently have little or no on-site treatment systems to install a composting or incinerating toilet as a way of "getting blackwater out of the front yard and off the beach" in a quick and affordable manner.

### Orientation, The septic tank

Most on-site sewage treatment systems start with a septic tank. Let's take a spin through. Most of the solids settle out in the first compartment. Fats rise and form a scum layer. Liquid is allowed to flow to the second compartment through a baffle which keeps scum out of the second chamber. More settling occurs here and effluent flows through the outlet to the next stop on the road which, in a conventional system, is the drainfield.



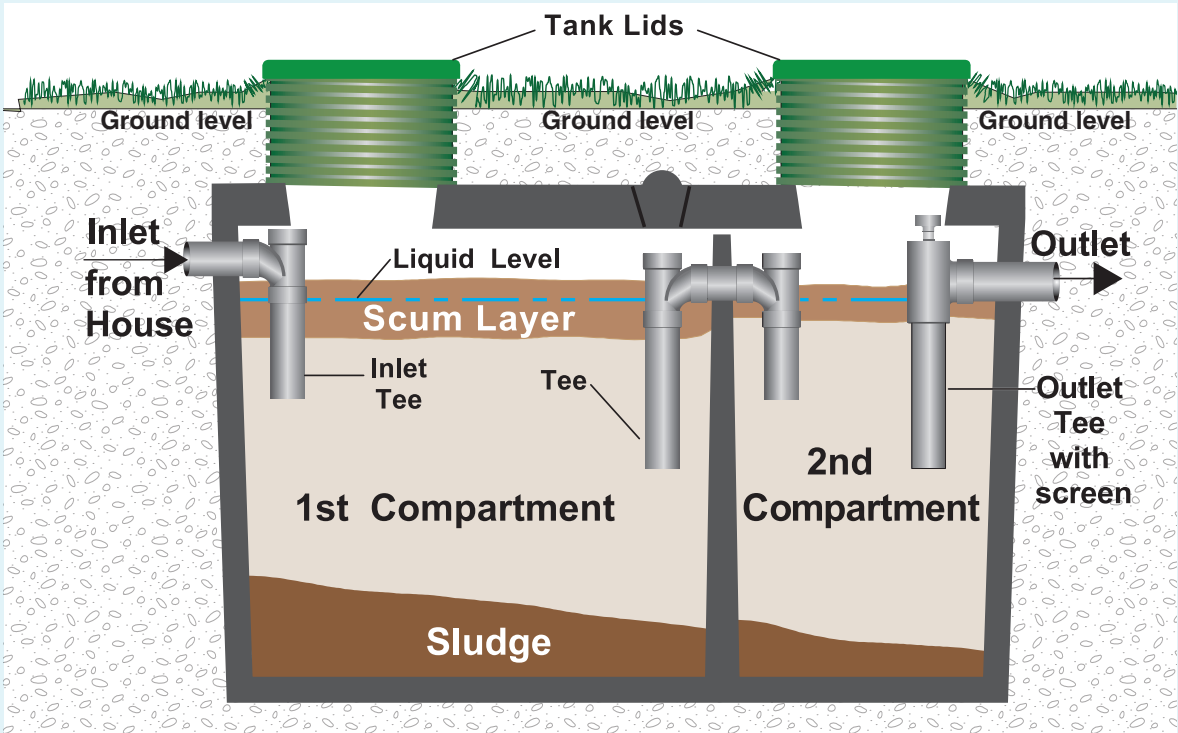
Susan Tobin shows off an incinerating toilet at Sludge Fest 2009



An example of a composting toilet at Sludge Fest 2009



Dale Korenek explains how a newly installed pressure distribution on-site septic system works while homeowner Charlie Pieterick looks on.



## Keep your septic system purring Dos

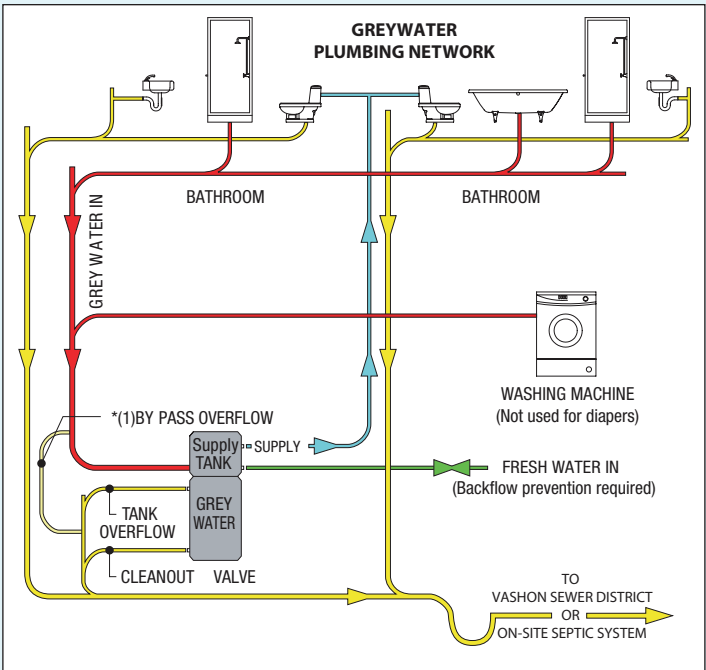
- Do regularly inspect and maintain your septic system
- Do pump your septic tank every three to five years—have your pumper evaluate need first
- Do be water-wise—fix leaks and spread out washing loads
- Do direct water from land and roof drains away from the drainfield
- Do landscape with love—use shallow-rooted drought-tolerant plants
- Do keep septic tank lids easily accessible
- Do contact a certified professional to repair your system

## Don'ts

- Don't use a garbage disposal
- Don't flush anything except water, poop, urine and toilet paper into your septic system
- Don't put household chemicals down the drain
- Don't park cars and trucks on your drainfield or septic tank
- Don't use septic tank additives
- Don't drain water from hot tubs into your septic system

## Greywater reuse

When you think about it, flushing toilets with drinking water doesn't make sense. We spend a lot of money collecting and treating water so that it is drinkable and then we use it to flush the toilet? Now you can have your home plumbed so that you can reuse water from your washing machine, sinks, tub and shower to flush your toilet.



Above is a system for greywater recycling in the home. Used water from wash basins (except the kitchen sink), bathtubs, showers and clothes washers is used to flush the toilets. Note: Permit required for installation.

## Greywater irrigation

New rules for the use of **greywater for subsurface irrigation** are due by December 2010. The major problem with greywater is that it can contain disease-causing organisms as well as oils, grease and soap. Surprisingly, water from kitchen sinks contains similar amounts of fecal coliforms as blackwater. The cleanest water is from the shower, bath and hand basins.

## Aerobic treatment systems

In a conventional septic system, bacteria use up all the oxygen in the septic tank. Aerobic treatment systems inject air into the tank which encourages sewage-digesting bacteria to decompose the waste more efficiently. Aerobic systems are often used to retrofit failing drainfields based on the idea that oxygen can help decompose organic mats that build up in the drainfield.

## Sub-surface drip fields

Similar to the drip irrigation lines that you may have installed in your garden, effluent from your septic system can be released in a drainfield using sub-surface drip lines installed only six inches below the surface. An advantage of this system is that it is installed in the root zone of plants which can take up nutrients, like nitrate, before they make their way to groundwater.

## What systems are available on the Island?

King County allows the use of all Washington state-approved on-site treatment systems and products.

## Septic monitoring requirements

On-site sewage disposal systems are required to be inspected by a licensed maintainer. For gravity systems, the inspection should be done every three years and can be done by the homeowner or a licensed maintainer. Other systems should be inspected every six months or annually, depending on the type of system you have. Although the rules apply to all homes using on-site systems, enforcement is currently triggered at the time of sale. However, an annual inspection and report is required in the Marine Recovery Area.

## Permits

Permits are required for any alterations or repairs to your septic system as well as for changes to your plumbing. Be sure to contact Public Health-Seattle & King County, Environmental Health Services before you work on your plumbing or septic system.

